How to Code with LLMs: Prompt Engineering Tips

Tip	DO Example of good use of the tip	DON'T Example of bad use of the tip
Clear, detailed, non-ambiguous, and concise.	I have 3000 Reddit posts. I want to use topic modeling to find out what the posts are talking about. Before doing the topic modeling, how do I need to prepare the text?	How to pre-process text for NLP?
Tell the LLM what role to take, and your own expertise.	You are an expert in computational biology, particularly genomics. What are the key R packages for statistics?	What are the key R packages for statistics?
Describe the programming language, libraries, and other technologies.	How do I scrape a website in Python using Selenium?	How do I scrape a website in Python?
Explain what the code is for.	I want to scrape a website that relies heavily on JavaScript. I want to get the source code after loading all elements. How can I do that with Python?	I want to scrape a website. How can I do that with Python?
Specify any constraints or requirements.	Using ggplot2 in R, I want to iterate over 100 columns, creating the same plot with each. Please write code to do that considering that I'm running the code in my university's high-performance computing cluster.	Using ggplot2 in R, I want to iterate over 100 columns, creating the same plot with each. Please write code to do that.
Be specific about what you want the code to do.	Write a function in Python that takes two numbers, adds them, and returns the result. The function should raise a type error if the inputs are not numbers.	Write a function in Python that takes two numbers, adds them, and returns the result.
Provide examples of the desired behavior.	Write a regular expression to match salaries in job postings. These are some examples:	Write a regular expression to match salaries in job postings.

CoDEx

	String: Minimum $60,000 ANNUAL (12 months) Match: $60,000 String: Rate of Pay $78,035 - $106,517 Match: $78,035 and $106,517 String: starting salary will be from £46,047 up to £61,823 Match: £46,047 and £61,823	
Ask the LLM to explain itself and any assumptions.	Write a regular expression to match salaries in job postings. Explain any assumptions that you're making about the data and what the match should be.	Write a regular expression to match salaries in job postings.
Ask the LLM to work step-by-step.	What is this code doing? iris %>% group_by(Species) %>% summarize_all(mean) %>% ungroup %>% gather(measure, value, -Species) %>% arrange(value) Work step-by-step.	What is this code doing? iris %>% group_by(Species) %>% summarize_all(mean) %>% ungroup %>% gather(measure, value, -Species) %>% arrange(value)
Specify how you want the LLM to give you the information.	What are different packages for supervised learning in R, as well as their pros and cons? Provide the information in a table with only one row per package.	What are different packages for supervised learning in R, as well as their pros and cons?

You probably won't get the prompt right the first time. Iterate—reformulate your prompts as needed!